

AMENDMENTS TO THE SPECIFICATION:

Please amend the paragraph beginning on page 1, line 2 as follows:

This application is a continuation of U.S. patent application Ser. No. 09/435,045 filed Nov. 8, 1999, now U.S. Pat. No. 6,685,218, which is a continuation-in-part of U.S. patent application Ser. No. 09/114,962 filed July 14, 1998, now U.S. Pat. No. 6,419,265, which is a continuation-in-part of U.S. patent application ~~Serial~~ Ser. No. 08/101,017 filed Sep. 16, 1993, now U.S. Pat. No. 5,842,716, all of which are included herein by reference.

Please amend the paragraph beginning on page 8, line 23 as follows:

The inflator ~~means~~ may be any component or combination of components which is designed to inflate an airbag, preferably by directing gas into an interior of the airbag. One embodiment of the inflator ~~means~~ may comprise a primer. In this case, the crash sensor includes an electronic circuit including the accelerometer and the primer such that ~~upon~~ if movement over time of the sensing mass results in a calculated value in excess of the threshold value, the electronic circuit is completed thereby causing ignition of the primer.

Please amend the paragraph beginning on page 15, line 28 as follows:

In FIGS. 1 and 2, the stab primer was shown as part of the inflator assembly, i.e., contained within the housing of the inflator assembly defined by housing portions 121,129. On the other hand, in FIG. ~~[[8.]]~~ 8, a cross section view of a through bulkhead initiation system adapted to a mechanical self-contained airbag system is illustrated. In this case, the stab primer 822 is instead part of a sensor assembly 840, i.e., arranged in the sensor housing on the bottom cover thereof if present, and when the stab primer 822 is initiated by a firing pin 842 formed in conjunction with a cantilevered, biasing spring (as in the embodiment shown in FIGS. 1 and 2), it creates a shock on one side of an inflator housing wall 821 which is transmitted through the wall 821 and interacts with a shock sensitive pyrotechnic mix 829 which has been placed into a cavity 805 in the igniter mix. Inflator housing wall 821 is alongside the bottom cover of the sensor housing, but in the alternative, the inflator housing wall may be the same as the bottom cover of the sensor housing. This through-bulkhead initiation system and the particular pyrotechnic mix formulation is well known to ordinance engineers where it has been applied to military devices. Such a system has not been used, however, in airbag systems. In this manner, a hole is not opened between the sensor assembly and the inflator assembly and the gas is prevented from leaking into the sensor assembly.

Please amend the paragraph beginning on page 16, line 14 as follows:

In FIG. 9, a perspective view of a mechanical self-contained airbag system using a crush sensing arming system designated generally as 950 is shown in the state before a crash occurs. In this embodiment, the sensor is armed when the vehicle door skin, or side skin, is crushed to where it impacts a curved impact plate, not shown, which then impacts a sensor can 970 surrounding the sensor assembly and displaces an outer cover 951 thereof relative to a sensor housing 901. Sensor can 970 has a tubular wall arranged partially alongside a housing section of the inflator assembly to thereby define a closed space between the outer cover 951 and an outer surface of the inflator assembly in which the sensor assembly is positioned. The sensor crush-sensing outer cover 951 has a slight arcuate shape so that it oil-cans or deflects downward pressing on lever 971 through a hemi-spherical pusher member 979. Lever 971 is hingedly mounted at one end thereof to enable it to rotate about its attachment point 972 to the sensor housing 901 and causes lever 973 to also rotate about its pivot point 974 on the sensor housing 901 by virtue of hinge 978. ~~An~~ As shown in FIG. 9A, an end 975 of lever 973 extends through an aperture 904 in a wall of the sensor housing 901 and serves to restrain the sensing mass 941 from any movement (~~FIG. 10~~). The rotation of lever 973 causes the end 975 of lever 973 to pull out of the sensor housing 901 where it was detenting the sensing mass 941 and preventing the sensing mass 941 from rotating to the degree necessary to release a firing pin spring 942. The sensing mass 941 is then free to move and release the firing pin spring 942 causing the firing pin spring 942 to ignite the stab primer in the inflator assembly, either by contact therewith or by pressure against the inflator assembly housing (see above) causing inflation of the airbag (FIG. 11A). Thus, until the sensor experiences a crushing force from the crash, the airbag system cannot deploy. The sensing mass 941, firing pin spring 942, inflator assembly and airbag may have the same structure as described above with reference to FIGS. 1 and 2. Other features of any of the disclosed embodiments not inconsistent with the embodiments shown in FIGS. ~~9-11~~ 9-11A may also be incorporated therein.

Please amend the paragraph beginning on page 17, line 11 as follows:

This provides a sensor system that requires the occurrence of two environments that are always present in a crash, crush and velocity change. The crush sensing outer cover 951 is designed to respond and arm the sensor when impacted from any reasonable direction by an impact plate, e.g., the curved impact plate discussed above, (not shown) which is likely to occur in a crash. For many vehicles, the crush may not reach the sensor at the time that deployment is required. In the case where two systems are used on each side of the vehicle, for example, and an impact occurs at the A-pillar, the rear seat system may not experience crush in time. The arming system shown in FIG. 9 could still be used where the

arming would occur when the system is mounted onto the vehicle instead of when the crash occurs. In this case, the curved impact plate would not be necessary and the deflection of the sensor cover 951 would occur either during the mounting process or by a separate operation after the system is mounted.

Please amend the paragraph beginning on page 17, line 22 as follows:

FIG. 10 is a cross section view of the apparatus of FIG. 9 taken along ~~lines~~ line 10-10 and FIG. 10A is an enlarged, partial view thereof showing the crush sensing outer cover 951 and lever system after end 975 has moved out of aperture 904 as a result of crush of the vehicle but before the sensing mass 941 of the discriminating sensor has begun to move. FIG. 11 is a similar view of the apparatus of FIG. 10 but shows the sensing mass 941 of the discriminating sensor after it has moved and released firing pin spring 942, triggering the inflation of the airbag.

Please amend the paragraph beginning on page 18, line 17 as follows:

FIG. 12 is a perspective view of a side impact airbag system illustrating the placement of the airbag vents in the door panel and the exhausting of the inflator gases into the vehicle door 1200 and also showing the use of a pusher plate 1201 to ~~adjust~~ account for the mismatch between the point of impact of an intruding vehicle (or other object) and the sensor of a self-contained side impact airbag system 1220. The pusher plate 1201 is shown attached to the main structural door beam 1202 in this illustration but other mounting systems are also possible. The airbag system 1220 is shown between the inner panel 1230 and the outer panel 1240 of the door 1200.

Please amend the paragraph beginning on page 19, line 2 as follows:

FIG. 13 is a cross-sectional view of a self-contained side impact airbag system using an electro-mechanical sensor. An electro-mechanical sensor is one in which the sensing is accomplished through the motion of a sensing mass from a first at-rest position to a second activating position at which point an event happens which typically involves the closing of a switch by mechanical or magnetic means. In the embodiment shown in FIG. 13, biasing spring contact 1301 is caused to engage contact 1302 arranged on an inside of the top cover 1350 when the sensor experiences a crash as described above, i.e., acceleration of the sensor housing 1310 above a predetermined threshold value which results in movement of the sensing mass 1341 until the biasing contact 1301 contacts the other contact 1302. Specifically, the biasing spring contact 1301 is positioned in a position (e.g., bearing against sensing mass 1341 in sensor housing 1310) so that it is moved during a crash along with movement of the sensing mass 1341 (~~in the upward direction~~ to the left in FIG. 13) to thereby bring the biasing spring contact 1301 into contact with

contact 1302. An electrical circuit is thereby completed causing ignition of the primer or squib and thereafter the igniter mix and propellant. As shown in FIG. 13, the structure of the sensor housing 1310, inflator assembly 1312, mounting plate 1360 and sensing mass 1341 may be as described above in appropriate part.